



## CEO's Report



As Antarctica NZ looks forward to the start of International Polar Year in 2007, we are set to start one of our busiest ever seasons of on-Ice activity. The start of ANDRILL drilling operations in October represents a significant science milestone, which has seen four years of planning and preparation between the US, Germany, Italy and New Zealand to ensure success. We can be justly proud of the role New Zealand has taken in leading the project management of this important climate change research project.

We also embark on the second field location of our Latitudinal Gradient Project at Gondwana Station and look forward to commemorating the establishment of Scott Base 50 years ago on 20 January 1957 with the Prime Minister, Sir Edmund Hillary and representatives of the United States who have been such close partners in science co-operation over that period.

As the organisation looks to the future we are undertaking a number of important changes to ensure that we can continue to deliver key science and environmental outcomes on the Ice to the highest possible standards. Following a period of significant growth over the last four years we need to position ourselves well to manage the multiple challenges of International Polar Year, ANDRILL, remote location science programmes, McMurdo/Scott Base resupply difficulties, rapidly increasing fuel and logistics costs, energy management and a demanding Scott Base capital development programme. As a result it has been necessary to realign the Antarctica NZ management team structure to continue to support our strategy to deliver high-quality services and support to the science community on a sustainable basis over the next 5 years. Most important is the need to provide on-site leadership at Scott Base over the busy summer months while minimising the effect on our Christchurch operation from extended staff assignments at Scott Base over the summer season.

With this in mind I have recently confirmed a realigned organisational structure with two new management positions: Manager Antarctic Programme and Manager Antarctic Support who will play key roles respectively in managing the Scott Base operation

to deliver the entire New Zealand Antarctic field programme and managing the support needs of the programme (inter-continental logistics and resupply, capital infrastructure and major science operations, e.g. ANDRILL). Both positions will spend time at Scott Base as my senior representative on the Ice over the summer period starting 2007/08. I have also combined all our environment and outreach activity under a new position, Manager Environment & Outreach. (A copy of the new organisational chart and key accountabilities of the new managerial roles is shown on our website [www.antarcticnz.govt.nz](http://www.antarcticnz.govt.nz) )

I am pleased to report that Dr Neil Gilbert has been confirmed as the new Manager Environment & Outreach. I am also pleased to announce that Erik Barnes has been appointed to the position of Manager Antarctic Programme, Iain Miller will take on the role of Manager Antarctic Support and Keiran Bleach will assume the role of Public Affairs Advisor. The changes have been made following an extensive period of consultation with the Board and staff of Antarctica NZ. To read more about these individuals, please see page two.

I would like to acknowledge the work of Julian Tangaere and Emma Reid in their respective roles of Operations Manager and Communications Manager. Their contributions have been highly valued by us all and left a very solid legacy of achievement on behalf of the New Zealand Antarctic Programme and Antarctica NZ.

With the recent completion of our 2006/07 Pre-Antarctic Training Course, we look forward to working with another high-quality intake of staff for the forthcoming season. The new team are in very good hands under the leadership of Peter Brookman and Mike Mahon.

I would also like to acknowledge the tremendous assistance I have had from departing Board members Bill Mansfield, Dr Wendy Lawson and Dr Maj De Poorter, who have recently completed two terms on the Antarctica NZ Board.

I wish all our events every success over the coming summer season.

## Designs on Sustainability

Former Antarctic Artist David Trubridge (2004/05) was among a panel of people who spoke to the Annual Antarctic Conference in July about what it meant for them to go to Antarctica and how it influenced their work.

David said that originally he wanted to use the opportunity to develop works that conveyed the message of the importance of sustainable design. Antarctica was a valuable reference point because of the way it epitomised survival, and the role it plays in revealing the impact we are having on the planet and its weather systems.

Once he arrived, however, Antarctica had a far more profound effect than he had anticipated and it was hard to translate the amazing experience of Antarctica into visual form. He also came away with a heightened awareness of the destructive nature of our consumer lifestyle, and addressing this became his main outcome of the Fellowship.



Above: David Trubridge's exhibition *On Thin Ice*

"It was important for me to concentrate on the message rather than produce too many more objects. My main outcome has been a powerful lecture about the importance of sustainable design, which is being constantly developed as I learn more. I've given many talks around the world over the last 18 months. They have been particularly well received by young people." David has also produced a booklet which is a summary of the lecture.

"The Artists to Antarctica programme is a wonderful initiative and I dearly hope it continues for a long time. It is a unique experience for the artists and it is a valuable way of conveying something of the place outside the normal scientific circles. It is impossible in advance to know how you will react to the experience, and the best results will be obtained when artists are entrusted to find their own course afterwards. I commend both Creative New Zealand and Antarctica New Zealand for their understanding of the artistic process, in not making us commit to a preconceived plan," David said.

For more information on David's work or to obtain a copy of his lecture go to [www.davidtrubridge.com](http://www.davidtrubridge.com)

## New Positions Filled

Erik Barnes, our new Manager Antarctic Programme, has been Antarctica NZ's Programme Support Manager since 2004 and has worked in Antarctica continuously since 1999. Erik, who was a Field Safety and Training Instructor for the US Antarctic Programme, has worked as Camp Manager for Raytheon Polar Services in both Greenland and Antarctica, carried out key science logistics roles in deep field operations, acted as Search and Rescue Team Leader and worked as an Arctic/Antarctic cold weather survival school instructor for the US Air Force in Greenland. Not only does he bring solid science field operations support experience to the Management Team, but he has strong information technology skills as well.

Iain Miller has taken on the role of Manager Antarctic Support. Prior to joining Antarctica NZ, Iain was director of a Christchurch-based professional services consultancy company that specialises in large capital management projects. Iain, who has a Bachelor in Commerce and a NZ Certificate in Civil Engineering, has been involved in the redevelopment of both Christchurch International Airport and Jade Stadium. When he joined Antarctica NZ, Iain was working with Meridian Energy on major wind farm project feasibility studies. Iain has also served on the senior management team at Holcim (NZ) Ltd with responsibility for transport logistics (shipping and road transport), sales and marketing, project management services, capital assets and five-year planning. He has strong project management, engineering, information technology and logistic skills.

Antarctica NZ's new Public Affairs Advisor is Keiran Bleach. Keiran, a qualified journalist, was a general news and sports reporter in New Zealand and the UK before beginning a communications and media relations career. She has worked in various government agencies and ministries including Land Information New Zealand, the Ministry of Agriculture & Forestry and the Ministry of Health. Keiran, who it is hoped will keep the rest of Antarctica NZ motivated to keep fit with stories of her five completed half-marathons and four Lake Taupo Cycle Challenges, was a media advisor to Hon Annette King and has a broad base of experience across media and events management.

## Arts Fellows in Writers' Festival

The ninth Christchurch Writers' Festival held over the period 8-10 September featured four Antarctic Arts Fellows. Bill Manhire, Bernadette Hall, Margaret Mahy and Laurence Fearnley reflected warmly on their time on the ice through the artists programme and how their experiences have translated to the page in a presentation entitled *Antarctica: Wide, White Page*.

The presentation, sponsored by Antarctica New Zealand and chaired by Chris Cree-Brown (also an Antarctic Arts Fellow), was well supported, with approximately 100 in the audience having ventured out early on a Saturday morning.

## Three in a Row

Proof – if ever it was needed – that good things happen in threes, was evident when Dr Victoria Metcalf, a Postdoctoral Research Fellow in the Biological Sciences department at the University of Canterbury, recently received three prestigious science awards: the Zonta Science Award, the Antarctic Science Bursary, and a SCAR Fellowship (Scientific Committee of Antarctic Research).

The Zonta Science Award is awarded biennially. “The judging panel looked for an outstanding woman scientist who would be able to use the award to further her career, but also a person who contributed to her community and could be an advocate for women in science”, said Sharon Nelson-Kelly, Zonta Award convenor.

Victoria has also won the Antarctic Science Bursary, an award made annually by Antarctic Science Ltd, a charitable company whose role is to promote Antarctic Science by supporting promising young scientists, working in any field of Antarctic scientific research. The purpose of this award is to broaden the scope of an existing research project.

At the opening of the SCAR meeting in Hobart, in July, Victoria was awarded a SCAR Fellowship. These are for PhD students and Postdoctoral Fellows and are designed to encourage the involvement of young scientists and engineers in Antarctic scientific research, and strengthen international co-operation in this area. Victoria plans to use the award to further her current project on Antarctic fish.

“I am investigating lipid transport in Antarctic fish as a first step to understanding how they metabolise fat and adapt to cold. The long-term aim of this study is to see how they have adapted to cold in order to give us an insight into how they will cope with global warming. The award enables me to travel to Boston to spend two to three months working in the laboratory of Professor Bill Detrich, a leading Antarctic fish biochemist and molecular biologist at Northeastern University, and I am really looking forward to working with him”, Dr Metcalf said.



Above: Victoria Metcalf with the Prime Minister Helen Clark and MP Winnie Laban

## Science Scholarships Awarded

Four science scholarships were recently awarded to young postgraduate students at the midwinter function at Government House, as part of the Annual Antarctic Conference.

Nita Smith (University of Canterbury) was the recipient of the New Zealand Post Antarctic Scholarship. She will study the Darwin-Hatherton glacial system and its response to climate change. Nita’s proposal forms part of a wider research programme - Dynamics and Change of the Darwin-Hatherton Glacial System - being run through Gateway Antarctica at the University of Canterbury.



Above: NZ Post Antarctic Scholarship winner Nita Smith

Angela McGaughran (Massey University) and Ed Abdool (Victoria University of Wellington) were the joint recipients of the Kelly Tarlton’s Antarctic Encounter and Underwater World Antarctic Scholarship. Angela’s research uses genetic and physiological (life history) elements to decipher the unique evolutionary patterns in polar environments for terrestrial invertebrates such as mites and springtails.

Ed will undertake the mathematical modelling of productivity and biomass along a latitudinal gradient in the Ross Sea. Ed proposes to link physical, geographic and biological data into a mathematical model of population dynamics in order to summarise the biodiversity at each site.

Tracey Jones (University of Waikato) is the recipient of the inaugural two-year Helicopters New Zealand Antarctic Doctoral Scholarship. Tracey’s research looks to understand the origins and partner choices of Antarctic lichens. This study will contribute to a better understanding of the structure of existing vegetation, its likely origins, its relationships to floras outside Antarctica and likely changes if proposed climate change occurs.

Tim Hay (University of Canterbury) is the recipient of the inaugural Christchurch City Council Antarctic Scholarship, administered by Gateway Antarctica at the University of Canterbury. Tim proposes to investigate bromine explosion events and their relationship to ozone depletion in the coastal Antarctic boundary layer. Tim will be co-supervised by Gateway Antarctica and NIWA.



Above: Colourful crustose lichens growing on a rock at Cape Royds



Above: Photomontage of turbines on a proposed site, near Crater Hill

## Sustainability on the Ice Generates Awards

Jake Frye, a University of Canterbury Masters student with a Scott Base connection, received two accolades at this year's MacDiarmid Young Scientists of the Year Awards. Jake won the 2006 MacDiarmid Masters Award and was judged runner-up in the Understanding Planet Earth category for his "Sustainability on the Ice" research project which looked at the feasibility of using wind-generated power at Scott Base.

Jake's research will determine the most efficient turbines to handle the high winds and freezing temperatures, and also identify the most efficient sized turbine to meet Scott Base's needs, avoiding the unnecessary costs of over-capacity. "Habits would need to change to get the most out of any wind turbine installation. Scott Base staff would need to use wind-generated power as it's produced, matching demand to supply, to reduce the dependence on diesel generators. This would save on fuel and CO<sub>2</sub> emissions. You can't defer the load of the coffee maker at Scott Base but you could, for example, be flexible about when the laundry gets done. Co-ordinating the laundry with the available wind power is an example of providing a service based on power availability, not just supplying power for all services at all times," said Jake. There is no shortage of wind on the Antarctic coast, with gusts often reaching 200 kilometres an hour, but Scott Base is currently totally reliant on fossil fuels.

The MacDiarmid Awards are designed to recognise excellent research, science and technology while also promoting the importance of good science communication. They are made annually by the Foundation for Research, Science and Technology to foster excellence and the innovative spirit of New Zealand's top young researchers.

## Honorary Doctorate for Bill Davison

Longstanding Antarctic scientist Bill Davison, Professor of Biological Sciences, University of Canterbury, will receive an honorary PhD from the University of Goteborg, Sweden later this year.

The degree of Doctor Honoris Causa is in recognition of Bill's unique knowledge of Antarctic fish physiology and ecology which has inspired a number of fellow scientists around the world, and for his hospitality to both researchers and students from the Department of Zoophysiology in Goteborg. Over the past 14 years both scientists and students have taken part in the longstanding K057 project in the New Zealand Antarctic Programme, which Bill has led. The award is especially timely in light of the upcoming International Polar Year 2007.

## Sir Peter Blake Award Honours Antarctic Scientist

Fellow Scientist Dr Gary Wilson, a geologist at the University of Otago, was one of six recipients of this year's Sir Peter Blake Emerging Leader Awards.

The awards are presented annually to people recognised as young leaders of considerable potential, and this year were presented by the retiring Governor General, Dame Silvia Cartwright.

Early in his academic career, Dr Wilson developed an international reputation for his research. He held a Fulbright award while at Victoria University, followed by the Admiral Byrd Fellowship at The Ohio State University. He was a New Zealand Foundation for Research Fellow, before taking up a lectureship at the University of Oxford.

Gary is also chair of the multi-national ANDRILL (Antarctic Drilling) project, which has been five years in the planning, and gets underway in Antarctica in October 2006. The project involves over 100 scientists and Gary's ability to build and maintain successful teams to achieve common goals has been an important element.

Gary has led seven expeditions to Antarctica, and has contributed to the wider understanding of science through public lectures and media appearances. He is a continuous promoter of the importance of science to underpin global environmental stewardship at government level.

He currently supervises 10 graduate students, involving them in his expeditions to Antarctica, to South America or on international research ships, and has received a graduate supervisor award from the Otago University Students Association. He has also recently been appointed Research Dean for the Division of Sciences at the University of Otago.

## News from the CEP

The 9<sup>th</sup> meeting of the Committee for Environmental Protection (CEP) took place in Edinburgh, Scotland, under the Chairmanship of Dr Tony Press (Australia), and in conjunction with the twenty-ninth Antarctic Treaty Consultative Meeting (ATCM XXIX).

The New Zealand delegation to the CEP was:

- Harry Keys, Department of Conservation
- Sandra Pope, Ministry of Foreign Affairs and Trade
- Lou Sanson, Antarctica New Zealand
- Neil Gilbert, Antarctica New Zealand (CEP Representative)

The Committee considered 38 working papers and 68 information papers. New Zealand submitted five working papers and seven information papers.

Once again it was a busy meeting for the CEP, which addressed more than 90% of the working papers placed before the whole meeting. Overall it was also a constructive and productive meeting, with good progress made on many issues. The only matter of contention was the disagreement over the establishment of the Indian station within the proposed Larsemann Hills Antarctic Specially Managed Area (ASMA), a matter on which New Zealand will keep a close eye.

This was also a meeting in which New Zealand had significant influence. Our papers on non-native species, environmental domains analysis and protected area inspections attracted significant interest and were all supported by the meeting. New Zealand was also influential in the outcomes to the debates on specially protected species. The Resolution on Southern Giant Petrels, adopted by the ATCM, stemmed from our drafting, and again we were influential in drafting the measure on de-listing of fur seals.

Ahead of the main CEP meeting, the UK hosted an informal workshop on Antarctica's future environmental challenges. The workshop discussions resulted in a number of recommendations for the CEP's consideration and identified a comprehensive list of issues the CEP would need to give attention to over the next three to five years. The Committee agreed that the most appropriate means to manage its work programme was by developing a five-year rolling work plan, and asked Dr Neil Gilbert to convene an inter-sessional contact group to work towards that end.

This initiative reflects well on the CEP, and its desire to take a proactive approach to managing its agenda and workload. Commission for the Conservation of Antarctic Marine Living Resources (CAMLR) has done just this for its Working Group on Ecosystem Monitoring and Management. This had been an effective means of managing the working group's growing agenda.



Above: Committee for Environmental Protection in session at the ATCM, June 2006

## Environment Manager elected as CEP Chair

At the recent Committee for Environmental Protection (CEP) meeting in Edinburgh, Dr Neil Gilbert, Antarctica New Zealand's Environmental Manager, was elected as the new Chair of the CEP. Neil replaces Dr Tony Press, the Director of the Australian Antarctic Division.

There are currently 32 countries that are parties to the Protocol and therefore members of the CEP. New Zealand has been a member of the CEP since the Committee came into being in 1998.

The Antarctic Treaty's Committee for Environmental Protection (CEP) is the primary advisory body to the Antarctic Treaty Parties on environmental issues in Antarctica. The CEP was established by the Protocol on Environmental Protection to the Antarctic Treaty, which entered into force in 1998. The primary functions of the CEP are to advise the parties on the effectiveness of implementation of the Protocol, as well as on other environmental issues such as monitoring, non-native species, protected area management and state of the environment reporting. The CEP normally meets once a year in conjunction with the Antarctic Treaty Consultative Meeting (ATCM).

## New COMNAP Chair visits New Zealand

Dr Jose Retamales, Director of the Chilean Antarctic Research Institute, took time out from his schedule while in Christchurch to give an informative presentation to the staff at Antarctica New Zealand. His talk featured the structure and current activities of the Chilean Antarctic Programme.

Dr Retamales, previously a Professor of Chemical Engineering at the Magellan University, Punta Arenas, Chile, was elected as the new Chair of the Council of Managers of National Antarctic Programmes (COMNAP) at the joint SCAR/COMNAP meeting at Hobart in July 2006. Dr Retamales is also a permanent delegate to The Scientific Committee on Antarctic Research (SCAR) and in June of this year he Chaired the Working Group on Operational Matters at the XXIX Antarctic Treaty Consultative Meeting (ATCM) in Edinburgh.

## IPY Update

The International Council for Science (ICSU) and the World Meteorological Organisation (WMO) are co-ordinating planning for International Polar Year (IPY). IPY organisers will realise their goals through a programme of co-ordinated scientific research focused on the Polar Regions over a two-year period from 1 March 2007 - 1 March 2009. This allows researchers to observe two complete polar cycles and provides a second chance for on-site research activities in view of the harsh and unpredictable environments.

So far IPY organisers have endorsed 218 clusters of projects, with 42 focused on Antarctica, and a further 66 projects linked to the Polar Regions. Projects include marine, terrestrial and atmospheric research as well as studies of ice, space and new geographic frontiers.

The United Kingdom and Australia are yet to secure funding for additional IPY activities. The European Union is planning significant new activities and equipment that would total EUR 300m; meanwhile Belgium has announced plans to build a new Antarctic base. The United States has an IPY budget of US\$62m, allocated to the National Aeronautics and Space Administration (NASA), the National Oceanic & Atmospheric Administration (NOAA) and The National Science Foundation (NSF), and Canada has allocated CAN\$150m to fund IPY projects, of which CAN\$15m has been set aside for Antarctic activities.

In New Zealand, the Royal Society Committee on Antarctic Science (RSCAS) is the domestic organising body. The New Zealand scientific community has expressed interest in 37 IPY projects, but researchers are also looking to contribute to international objectives. There are no projects under the IPY umbrella in which New Zealand is the sole participant and only two, the Antarctic Drilling Programme (ANDRILL) and the Census of Antarctic Marine Life (CAML), in which it has a prominent leadership role.

New Zealand expressions of interest cover marine, terrestrial and atmospheric research. Education and outreach initiatives also feature. Some projects are already fully funded and most have partial funding. Others, such as the CAML, are not funded at present.

The Officials Antarctic Committee (OAC) is now working on a Cabinet paper outlining options for New Zealand's commitment to IPY. Once Cabinet has indicated their level of commitment, an appropriate budget bid will be developed and submitted by the OAC. If successful, an announcement of new funding will be made early in 2007 and proposals will be sought from individuals related to the 37 IPY projects previously identified.

## Southern Ocean Marine Workshop

In August, Antarctica New Zealand led a one-day Southern Ocean Marine Workshop hosted by the National Institute of Water and Atmospheric Research (NIWA) in Wellington.

Thirty-two marine researchers currently engaged in Southern Ocean research were represented. The workshop was focused on objectives for New Zealand's contribution to the Census of Antarctic Marine Life (CAML). After presentations on CAML, New Zealand's current Southern Ocean research and Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) contributions, researchers then focused on key questions that would be addressed under the CAML initiative.

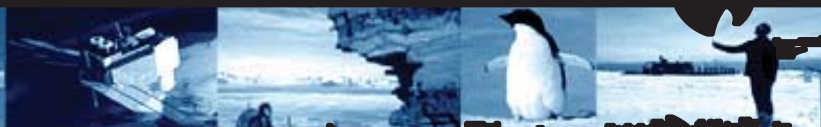


White sea anemone, with red starfish at the top left

The agreed outcome from the research under CAML was based on strengthening New Zealand's ability to contribute to the following areas:

1. The development and assessment of management measures (e.g. Marine Protected Areas, mitigation or avoidance of impacts of fishing etc)
2. Monitoring and modelling impacts of global warming and ocean acidification on Antarctic marine life and the consequent impacts on marine bio-geochemical cycling in the Ross Sea and Southern Ocean
3. The resolution of Antarctic marine management issues in international forums (e.g. Antarctic Treaty, CCAMLR)

The workshop created a draft overall objective for CAML, which is to describe and quantify marine biodiversity and ecosystem functioning of key offshore habitats in the Ross Dependency. There is a large amount of planning that still needs to be accomplished before the scheduled research voyage in February 2008. Copies of the workshop proceedings will be available shortly from Antarctica New Zealand.



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### Icesheet goes electronic

Because of Antarctica New Zealand's continued commitment to environmental best practice, Icesheet is going electronic! If you would prefer to receive your next issue of Icesheet via email, please contact Antarctica New Zealand and we will add you to our electronic database.

We'll be making contact with everyone on our current database over the coming months to ascertain your preferred way of receiving our publications. In the meantime, if you would like to alert us to a change of address, please contact Rebecca Elliott [r.elliott@antarcticanz.govt.nz](mailto:r.elliott@antarcticanz.govt.nz) or go to the 'contact us' part of the website.

### Cover Image

Adelie penguins head to sea